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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,506	10/16/2003	Louise C. Sengupta	10209-0010-4	9036
85643	7590	09/29/2011		
PARATEK DOCKET			EXAMINER	
304 Indian Trace Rd, #750			KEMMERLE III, RUSSELL J	
Weston, FL 33326				
			ART UNIT	PAPER NUMBER
			1741	
			NOTIFICATION DATE	DELIVERY MODE
			09/29/2011	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@gmgip.com

**Office Action Summary****Application No.**

10/687,506

**Applicant(s)**

SENGUPTA ET AL.

**Examiner**

RUSSELL KEMMERLE III

**Art Unit**

1741

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 1, 3, 7-11, 24, 25, 32-36 and 38-43 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1, 3, 7-11, 24, 25, 32-36 and 38-43 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-889)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

### **DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 September 2011 has been entered.

#### ***Claim Rejections - 35 USC § 103***

Claims 1, 3, 7-11, 24, 25 and 32-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta (US Patent 5,427,988) in view of Montgomery (Montgomery, Douglas. Design and Analysis of Experiments. New York: John Wiley & Sons, Inc, 1997).

Sengupta discloses a method of making an electronically tunable dielectric material that includes providing a layer of tunable material (such as barium strontium titanate, BSTO) with two metal oxides (such as MgO and SiO<sub>2</sub>) (Col 4 lines 3-63, Col 6 lines 14-37)). Sengupta specifically discloses that the BSTO be in an amount of 40-99% and MgO 1-60% (Col 4 lines 8-11).

Sengupta does not disclose the average particle size of the metal oxide particles, however some average particle size would have to exist. The average particle size of

materials used is well known to have an affect on numerous properties including strength, grain size and other factors. The selection of an appropriate grain size through routine experimentation would have been obvious to one skilled in the art.

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Sengupta does not disclose that after the product is made the properties recited in claim 1 are measured, and the process is repeated while adjusting the amount of one of the metal oxide materials.

However, this appears to be basic experimental analysis described by Montgomery as the "one-factor-at-a-time" approach where a baseline is established and a factor is changed while the remaining factors are held constant in order to determine how the response variable is affected (pages 4-5).

It would have been obvious to one skilled in the art, at the time of invention by Applicants, to have performed such basic experimental analysis on the process of Sengupta in order to determine which variable affect the final properties and how they

do so. This would have been obvious in order to ensure that the most desirably body was being made.

Referring to claims 3, 33 and 34 as discussed above the selection of the average particle size would be obvious to one skilled in the art.

Referring to claims 8-10 and 36, Sengupta discloses that the amount of the second oxide (such as  $\text{SiO}_2$ ) will alter the dielectric constant of the finished body (since they are referred to as low dielectric materials). It would have therefore been within the abilities of one skilled in the art, at the time of invention by Applicants, to have modified the method of Sengupta by optimizing the amount of second oxide through routine experimentation in order to achieve the desired dielectric constant. This optimization would result in optimizing the weight ratio of the two additional metal oxides ( $\text{MgO}$  and  $\text{SiO}_2$ ).

Referring to claims 24, 25, 39 and 40, Sengupta discloses that the tunability be 7-36% (Col 3 line 58 – Col 4 line 2). While it is not stated that this be the value at  $8\text{V}/\mu\text{m}$ , one skilled in the art would recognize this as being a desired tunability across all normal ranges (since no such value is given by Sengupta).

Referring to claims 7, 11, 35, 38, 42 and 43, these fall within the disclosure of Sengupta as discussed above.

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KEMMERLE III whose telephone number is (571)272-6509. The examiner can normally be reached on Monday through Thursday, 7:00-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on 571-272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./  
Examiner, Art Unit 1741

/Matthew J. Daniels/  
Supervisory Patent Examiner, Art Unit 1741